

Texas Institute for Applied Environmental Research: Assessment of Water Quality and Watershed Based Planning for Nolan Creek/South Nolan Creek (58-13-30061)
Progress Report: FY 2014 Quarter 2 covering December 1, 2013 – February 28, 2014 (submitted March 18, 2014)

TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
Contract Executed September 18, 2012			
1.2	Quarterly Progress Report FY13 Q-1 No. 1 Quarterly Progress Report FY13 Q-2 No. 2 Quarterly Progress Report FY13 Q-3 No. 3 Quarterly Progress Report FY13 Q-4 No. 4 Quarterly Progress Report FY14 Q-1 No. 5 Quarterly Progress Report FY14 Q-2 No. 6 Quarterly Progress Report FY14 Q-3 No. 7 Quarterly Progress Report FY14 Q-4 No. 8 Quarterly Progress Report FY15 Q-1 No. 9 Quarterly Progress Report FY15 Q-2 No. 10 Quarterly Progress Report FY15 Q-3 No. 11 Quarterly Progress Report FY15 Q-3 No. 12	Dec. 15, 2012 Mar. 15, 2013 Jun. 15, 2013 Sep. 15, 2013 Dec. 15, 2013 Mar. 15, 2014 Jun. 15, 2014 Sep. 15, 2014 Dec. 15, 2014 Mar. 15, 2015 Jun. 15, 2015 Sep. 15, 2015	December 14, 2012 March 15, 2013 June 14, 2013 Sept. 13, 2013 Dec. 13, 2013 March 18, 2014
1.3	Contract Communication Post-Award Meeting Post Award Meeting Minutes Quarterly Communication Minutes	Oct., 18, 2012 Dec. 15, 2012 Quarterly with QPR	Held Sep. 21, 2012 at TCEQ Offices in Austin Jan. 3, 2014 – Quarterly Coordination Conference Call to coordinate draft report deadlines, upcoming stakeholder meeting content. (Minutes Attachment 1)
1.4	Annual Report Article FY13 Annual Report Article FY14 Annual Report Article FY15	Upon Request Upon Request Upon Request	
1.5	Project Coordination Meeting with EPA	Sep 30, 2014	
2.1	QAPP Planning Meeting with City of Killeen	Oct. 18, 2012	Feb. 11, 2013 TIAER met with CoK in Killeen to discuss the QAPP and Monitoring plan drafts.
2.2	Draft QAPP for Monitoring	Nov. 16, 2013	Feb. 22, 2013 - A draft Monitoring QAPP was sent to the TCEQ Project Manager for review. Received comments March 28 and responded with final revision dated April 17, 2013 and QAPP approved May 2, 2013

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
2.3	Draft QAPP for Modeling	Nov. 16, 2013	Feb. 22, 2013 – A draft Modeling QAPP was sent to the TCEQ Project Manager for review. Received comment April 4 and responded with final revision dated May 13, 2013 approved May 16, 2013.
2.4	QAPP Updates FY13 FY14	No less that 60 days prior to end of effective period	Annual certification letter submitted to TCEQ on Feb. 5, 2014 noting only organization changes to the Modeling QAPP. Annual revision submitted on Jan. 28, 2013 to TCEQ and approved on Mar. 8, 2014 for the Monitoring QAPP. Annual certification letter for monitoring QAPP sent Feb. 28, 2014.
2.5	QAPP Amendments Draft QAPP Amendments Final	As needed As needed	No activity this quarter
2.6	Data Submittals (quarterly data submittals requested by TCEQ PM)	Mar. 15, 2013 Jun. 15, 2013 Sep. 15, 2013 Dec. 15, 2013 Mar. 15, 2014 Jun. 15, 2014 Sep. 15, 2014 Dec. 15, 2014 Mar. 15, 2015 Jun. 15, 2015 Aug. 15, 2015	Data collection started in May 2013 with approval of monitoring QAPP. First data submittal sent Sep. 13, 2013. Second submittal sent Dec. 16, 2013
3.1	Draft PPP Final PPP	Dec. 15, 2012 Mar. 15, 2013	Feb. 25, 2013 – Submitted to TCEQ PM Mar. 4, 2013 – PPP approved by TCEQ PM. Mar. 5, 2013 – Distributed final PPP in PDF form to project partners and TCEQ PM
3.2 – 3.5	Stakeholder Group Development, Activities, Meetings and Project Dissemination	Quarterly	Public Stakeholder Meeting was held January 16, 2014.
3.6	Draft Building Partnerships – Element E, Part A Report Final Building Partner ships – Element E, Part A Report	Mar. 15 & Sep. 15, 2013 & 2014 Aug. 15, 2015	March 4, 2013 – TCEQ PM gave final approval of PPP and approved document was sent in PDF form to project partners.

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
4.1-4.2	Inventory of existing data and GIS representation for watershed in shapefile or ArcGIS grid format	Nov. 15, 2013	Delayed but in progress
4.3	Draft Watershed Characterization Report	Dec. 15, 2013	Delayed but in progress. TCEQ PM notified of need for extension of due date.
	Final Watershed Characterization Report	March 15, 2014	
5.2	Draft Water Quality Monitoring Plan	Nov. 16, 2012	Reconnaissance and planning meeting held between TIAER and CoK January 18, 2013
	Final Water Quality Monitoring Plan	Dec. 15, 2012	Submitted to TCEQ PM for review February 22, 2013 and approved March 8, 2013.
5.3	Source Survey Technical Report	Dec. 15, 2014	
5.5	Draft Watershed Characterization – Phase 2 Report	Apr. 15, 2015	
	Final Watershed Characterization – Phase 2 Report	Jun. 15, 2015	
6.2	Watershed maps that identify potential cause and sources of water quality problems	Jun. 15, 2015	
6.5	Draft Watershed Characterization Phase 3 Report with Loadings	June 15, 2015	
	Final Watershed Characterization Phase 3 Report with Loadings	Jul. 15, 2015	
7.1	Define Education Goals	Mar. 15, 2013	Strategies for reaching targeted audience outlined in PPP Feb. 1, 2014 – TIAER PM Nikki Jackson began development of the educational display board and fact sheet handout updates. Material will be ready for partners review by April 1, 2014.
7.2	Identify Target Audience	Mar. 15, 2013	Target audience identified in PPP
7.3	Design Implementation Measures	Mar. 15, 2013	A fact sheet was approved by the stakeholder group on Sept. 5, 2013. A list of upcoming events for education/outreach has been Revised to reflect stream team trainings, rainwater harvesting events and master naturalists events coming up in the watershed. The new fact sheet will be posted on the

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TASK	DELIVERABLE	DUE DATE	DATE SUBMITTED
			project website.
7.4	Evaluate Education and Outreach Program FY13 FY14 FY15	Sep. 15, 2013 Sep. 15, 2014 Sept. 15, 2015	In August the team decided to use number of attendees at stakeholder events and meetings as an evaluation of the education and outreach program. The website will also contain a counter to monitor number of webpage visitors. Galen Roberts with AgriLife provided the watershed stewards pre/post knowledge evaluation tool for TIAER PM Nikki Jackson to use as a template for a specific Nolan Creek educational assessment/knowledge gained tool. It will be ready to distribute during the 7 th Quarter of the project.
7.5	Draft Information & Education Plan Report	Jun. 15, 2015	
	Final Information & Education Plan Report	Jul. 15, 2015	
8.1- 8.2	Draft Project Report	Jul. 15, 2015	
	Final Project Report	Aug. 15, 2015	

GENERAL COMMENTS

TASK	COMMENTS/ACTIVITIES
1. Project Administration	Project administrative duties occurred as needed including frequent email communication, development of quarterly progress reports and reimbursement requests.
2. Quality Assurance	The annual review of the monitoring and modeling QAPPs was conducted. Revision 1 of the Monitoring QAPP was approved and fully executed on March 8, 2014. The annual review of the Modeling QAPP indicated only organizational changes. Annual review certification letters for both were sent to TCEQ in February 2014.
3. Building Partnerships	A stakeholder outreach meeting was held in January 2014 and community events for further outreach were identified.
4. Watershed Characterization – Data Inventory	Work continued throughout the quarter with regard to the data inventory. The CoK is reviewing the data prior to making it available to TIAER for other tasks.
5. Watershed Characterization – Data Collection and Analysis	Routine monitoring was conducted monthly throughout the quarter at all 11 stations and is summarized in Table 1 at the end of the General Comments Section. Storm monitoring was conducted in late February at the four storm sampling stations (see Table 2). There were no Corrective Action Reports or Corrective Action Plans issued for project samples this quarter. The Corrective Action Status for past CARs and CAPs is updated and presented as Table 3.
6. Identification of Causes and Sources of Pollution and Estimation of Pollutant Loads	Limited activity this quarter with efforts focused on review of historical data for future use in source identification models.
7. Information and Education Component	Work was initiated on a pre and post assessment/knowledge tool. The fact sheet has been updated and included as Attachment 2.
8. Project Report	No activity to report

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Table 1. Routine Monthly Monitoring for December 2013 through February 2014. Number of samples and comments, as applicable.

Collection Date	TCEQ Station ID	Sonde	Nutrients & TSS	<i>E. coli</i>	Flow	Comments
12-Dec-2013	11915	1	1	1	1	
12-Dec-2013	18828	1	1	1	1	
12-Dec-2013	21436	1	1	1	1	
12-Dec-2013	18827	1	1	1	1	
12-Dec-2013	21437	1	1	1	1	
12-Dec-2013	11913	1	1	1	1	
12-Dec-2013	11911	1	1	1	1	
12-Dec-2013	11910	1	1	1	1	
12-Dec-2013	11908	1	1	1	1	
12-Dec-2013	11905	1	1	1	1	
12-Dec-2013	14237	1	1	1	1	
08-Jan-2014	11915	1	1	1	1	
08-Jan-2014	18828	1	1	1	1	
08-Jan-2014	21436	1	1	1	1	
08-Jan-2014	18827	1	1	1	1	
08-Jan-2014	21437	1	1	1	1	
08-Jan-2014	11913	1	1	1	1	
08-Jan-2014	11911	1	1	1	1	
08-Jan-2014	11910	1	1	1	1	
08-Jan-2014	11908	1	1	1	1	
08-Jan-2014	11905	1	1	1	1	
08-Jan-2014	14237	1	1	1	1	
05-Feb-2014	11915	1	1	1	1	
05-Feb-2014	18828	1	1	1	1	
05-Feb-2014	21436	1	1	1	1	
05-Feb-2014	18827	1	1	1	1	
05-Feb-2014	21437	1	1	1	1	
05-Feb-2014	11913	1	1	1	1	
05-Feb-2014	11911	1	1	1	1	
05-Feb-2014	11910	1	1	1	1	
05-Feb-2014	11908	1	1	1	1	
05-Feb-2014	11905	1	1	1	1	
05-Feb-2014	14237	1	1	1	1	

Sonde data includes dissolved oxygen, specific conductance, pH, and water temperature.

Nutrients include nitrite-nitrogen + nitrate-nitrogen (NO₂-N+NO₃-N, dissolved), total Kjeldahl nitrogen (TKN), orthophosphate-phosphorus (OPO₄-P, dissolved), and total phosphorus (TP).

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Table 2. Storm Monitoring for December 2013 through February 2014. Number of samples and comments, as applicable. Nutrient and TSS, unless noted, represent a flow-weighted sample collected with an automated sampler. Samples for *E. coli* are grab samples collected during elevated flow conditions.

Collection Date	TCEQ Station ID	Nutrients & TSS	<i>E. coli</i>	Flow	Comments
27-Feb-2014	18828	1	1	1	
27-Feb-2014	11913	1	1	1	
27-Feb-2014	11910	1	1	1	
27-Feb-2014	11905	1	1	1	

Nutrients include nitrite-nitrogen + nitrate-nitrogen (NO₂-N+NO₃-N, dissolved), total Kjeldahl nitrogen (TKN), orthophosphate-phosphorus (OPO₄-P, dissolved), and total phosphorus (TP).

**Table 3
Corrective Action Status Table**

Corrective Action # (CARs)	Date Issued (CAP)	Description of Deficiency	Action Taken	Date Closed
1 (CARs 13-0092 & 13-0105)	06Sep2013	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N & TKN)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	01Oct2013
2 (CAR 13-0097)	06Sep2013	Quanti-Tray comparator for <i>E. coli</i> analysis was used past expiration	Expired comparator was checked against new comparator. Added comparator expiration date to monthly maintenance check schedule.	10Jan2014
3 (CAR 13-0101)	06Sep2013	Field filtration of NO ₂ -N+NO ₃ -N and PO ₄ -P was unable to occur.	Field crew directed to use alternative parameter codes as outlined in the QAPP. Field personnel reminded to verify that loaded equipment matches the items on the equipment check list, which is located in the Nolan field notebooks.	03Sep2013
4 (CARs 13-0137 & 13-0138)	12Dec2013	Matrix spike beyond recovery limits (NO ₂ -N+NO ₃ -N & PO ₄ -P)	Associated sample data to be flagged with “SR” in data submittal. No specific corrective action identified. Lab will continue to monitor for trends.	13Jan2014

Attachment 1

Nolan Creek Project Conference Call – Draft Minutes

Date: Friday, January 3, 2014

Time: 10-10:30am

Participants: Anne McFarland - TIAER
Anju Chalise – TCEQ
Kristina Ramirez – City of Killeen
Joan Flowers – Jacobs

Topics Discussed:

Upcoming Stakeholder Meeting – Meeting from December 2013 rescheduled for January 16, 2014. Kristina has reserved the Killeen Civic & Conference Center, Meeting Room 4 located at 3601 South W.S. Young Drive, Killeen, TX 76542 for the meeting and indicated that this information needs to be updated in the stakeholder letter. Anne indicated that she would update the stakeholder letter and agenda and would provide these to Kristina for posting on the project website. Anju indicated that she did not need to review the stakeholder letter or agenda, but did want to receive a copy. Kristina noted that they had a new person hired for handling the website, so things should now be updated on a timelier basis.

Next Stakeholder Meeting – There was some discussion as to when the next meeting should be held and what information should be presented. February was suggested, but that seemed too close to the upcoming meeting. Mid to late March was then suggested and it was recommended that folks start checking their calendars for potential dates. Potential topics included presentation of Education Goals (Task 7.1), which Nikki would be the lead on, and land use information for the watershed that would be used in the SELECT modeling.

Draft Watershed Characterization Report – Joan is working on the draft of this report and plans to get together with Anne sometime in the next couple of weeks to transfer data. Joan will print out maps for Kristina to review before the report is finalized. The final report under Task 4.3 is scheduled due in March.

SELECT Modeling - Joan asked about the timing for the use of the GIS data with the SELECT modeling (Task 6.5). There is not a clear modeling schedule currently defined, except for a deliverable towards the end of the project. Anne noted that part of the idea of using SELECT is to interact with stakeholders regarding how various inputs are set, so they can provide feedback. This allows for more than one iteration of the model and the possibility of considering additional sources. This also ties in with the Source Survey under Task 5.3. Anne will work on a more detailed timeline for the SELECT modeling, but feels that initial runs with stakeholder feedback should occur this year if possible to allow time for revisions, as needed.

SSOs – Kristina noted that most of the SSOs involving the City of Killeen are “sucked up” by vacuum trucks if they occur within tributaries and are small. The waste then goes to the WWTF for treatment. While the City of Killeen is providing information on SSOs directly to the project, Anne is trying to get similar information on unauthorized discharges from the TCEQ Enforcement Division but has not yet been successful. Anne has been told to contact Lynley

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Doyen, who handles open records requests for this Division. Ms Doyen is on vacation until next week. If this does not work, it was suggested that opens records requests may need to be made to the individual communities in the watershed.

With regard to SSOs, the City of Killeen does georeference this information and will provide these data to Joan. We do need to define a start and cut-off date for this information. It was suggested that we include SSO data for at least a month prior to the initiation of monitoring (May 2013). Monitoring was scheduled for 30 months in the workplan, but that was anticipating that the monitoring would start in January rather than May. We need to look at the project schedule and budget to evaluate when the monitoring should end and how that affects the timing of other deliverables.

Attachment 2

Assessment of Water Quality & Watershed Based Planning for Nolan Creek



Why Nolan Creek?

Portions of Nolan Creek/South Nolan Creek currently do not support its designated uses and needs improving. Cleaner water allows for recreational use such as swimming, fishing, wading, and canoeing. Recreational use of Nolan Creek/South Nolan Creek promotes a stronger economy and healthier lifestyle for area residents.

Here's How YOU can get involved!

Upcoming Events

March 22 & 23: Rainwater Harvesting
Seminar (Killeen, Texas)

Upcoming Training Opportunities

May 17: Texas Stream Team Training
(Killeen, Texas)

Community Involvement

Nolan Creek Recreational Improvement Project

Goals for Nolan Creek
To restore good water quality throughout Nolan Creek/South Nolan Creek Watershed and to involve and educate residents on healthy water conservation of their watershed.

Contact Information:

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